

Amendments to the Claims:

This listing of claims replaces all prior versions and listings of claims in the application:

Listing of Claims:

1. (Currently Amended) A method of implanting a pressure measurement device in a heart of a patient, the method comprising:

providing a pressure sensor assembly comprising a pressure transducer and a pressure transmission catheter, the catheter consisting of a unitary tube structure that defines a single lumen within the unitary tube structure, the single lumen containing a pressure transmitting substance, the unitary tube structure having a distal portion that extends to a distal tip and a proximal portion, wherein the unitary tube structure is in part within the proximal portion of the unitary tube structure and in part within the distal portion of the unitary tube structure, the pressure transducer connected to the proximal portion of the catheter, the distal portion of the catheter having an opening at the distal tip with a barrier to separate the pressure transmitting substance from an environment outside of the catheter, wherein the proximal portion is more crush resistant than the distal portion, and wherein the distal portion is more flexible than the proximal portion and has a degree of flexibility and radiused corners such that the distal tip is atraumatic; and

positioning the catheter so that the relatively crush resistant proximal portion is disposed in, and extends across a substantial portion of an entire distance of, a heart wall, and so that the relatively flexible distal portion is located substantially within a chamber of the heart.

2. (Previously Amended) A method of implanting a pressure measurement device in a heart of a patient as in claim 1, further comprising:

providing an implantable telemetry unit;
connecting the telemetry unit to the pressure sensor assembly; and
implanting the telemetry unit in the patient.

3. (Previously Amended) A method of implanting a pressure measurement device in a heart of a patient as in claim 1, wherein the heart wall includes an epicardial layer, a myocardial layer and an endocardial layer, and wherein the positioning of the catheter comprises positioning the catheter across the epicardial layer, myocardial layer and endocardial layer.

4. (Previously Amended) A method of implanting a pressure measurement device in a heart of a patient as in claim 1, wherein the chamber comprises a left ventricle, and the heart wall in which the catheter is disposed is a septum.

5. (Previously Amended) A method of implanting a pressure measurement device in a heart of a patient as in claim 1, wherein the chamber comprises a right ventricle, and the heart wall in which the catheter is disposed is a wall of the right ventricle.

6. (Previously Amended) A method of implanting a pressure measurement device in a heart of a patient as in claim 1, wherein the heart wall comprises a septum, and wherein the positioning of the catheter comprises positioning the catheter across the septum.

7. (Previously Amended) A method of implanting a pressure measurement device in a heart of a patient as in claim 1, wherein the pressure sensor assembly includes a housing containing the pressure transducer, and further comprises securing the housing to the heart wall.

8. (Previously Amended) A method of implanting a pressure measurement device in a heart of a patient as in claim 7, wherein the securing of the housing to the heart wall comprises securing the housing outside the heart.

9. (Previously Amended) A method of implanting a pressure measurement device in a heart of a patient as in claim 7, wherein the securing of the housing to the heart wall comprises securing the housing inside the heart.

10. (Previously Amended) A method of implanting a pressure measurement device in a heart of a patient as in claim 1, wherein the positioning of the catheter comprises a surgical approach.

11. (Previously Amended) A method of implanting a pressure measurement device in a heart of a patient as in claim 1, wherein the positioning of the catheter comprises a transluminal approach.

12. (Previously Presented) A method of implanting a pressure measurement device in a heart of a patient as in claim 1, wherein the pressure transducer is provided in a housing which is disposed outside the chamber of the heart on an opposite side of the heart wall.

13. (Currently Amended) A method of implanting a device, the method comprising: providing an implantable device comprising a telemetry unit connected to a pressure sensor assembly connected to a catheter, the catheter consisting of a unitary tube structure that defines a single lumen within the unitary tube structure, the single lumen containing a pressure transmitting substance, the unitary tube structure having a distal portion that extends to a distal tip and a proximal portion, wherein the unitary tube structure is in part within the proximal portion of the unitary tube structure and in part within the distal portion of the unitary tube structure, the pressure sensor assembly connected to the proximal portion of the catheter, wherein the proximal portion is more crush resistant than the distal portion, and wherein the distal portion is more flexible than the proximal portion and has a degree of flexibility and radiused corners such that the distal tip is atraumatic; and implanting the device such that the relatively crush resistant proximal portion is disposed in, and extends across a substantial portion of an entire distance of, a heart wall, and so that the relatively flexible distal portion is located substantially within a chamber of the heart, the pressure sensor assembly connected to the heart wall outside the chamber.

14. (Previously Amended) A method of implanting a device as in claim 13, wherein the heart wall includes myocardium, and wherein the positioning of the catheter comprises positioning the catheter across the entire myocardium.

15. (Previously Amended) A method of implanting a device as in claim 13, wherein the chamber comprises a left ventricle, and the heart wall in which the catheter is disposed is a septum.

16. (Previously Amended) A method of implanting a device as in claim 13, wherein the chamber comprises a right ventricle, and the heart wall in which the catheter is disposed is a wall of the right ventricle.

17. (Previously Amended) A method of implanting a device as in claim 13, wherein the heart wall comprises a ventricular septum, and wherein the positioning of the catheter comprises positioning the catheter across the ventricular septum.

18-43. (Canceled)

44. (Previously Presented) A method of implanting a pressure measurement device in a heart of a patient as in claim 8, wherein the housing has a tissue in-growth promoting surface and a tissue in-growth deterring surface, and wherein the securing step comprises securing the tissue in-growth promoting surface to an epicardial surface of the heart with the tissue in-growth deterring surface facing a pericardial surface of the heart.

45-47. (Canceled)

48. (Previously Amended) A method of implanting a device as in claim 13, wherein the heart wall comprises a ventricular septum, and wherein the positioning of the catheter

comprises transvenously navigating the pressure sensor assembly until the catheter is disposed adjacent the ventricular septum, and positioning the catheter across the ventricular septum.

49. (Previously Amended) A method of implanting a device as in claim 48, wherein the positioning of the catheter comprises placing a septal anchor across the ventricular septum with the catheter disposed in the septal anchor.

50. (Previously Amended) A method of implanting a pressure measurement device in a heart of a patient as in claim 1, wherein the barrier is flush with a distal end of the catheter, and wherein the positioning of the catheter comprises positioning the barrier carried by the distal end of the catheter in the chamber.

51. (Previously Amended) A method of implanting a pressure measurement device in a heart of a patient as in claim 1, wherein the barrier is recessed from a distal end of the catheter, and wherein the positioning of the catheter comprises positioning the barrier carried by the distal end of the catheter in the chamber.

52. (Previously Amended) A method of implanting a pressure measurement device in a heart of a patient as in claim 51, wherein a dissolvable material is disposed in the distal end of the catheter, and wherein the positioning of the catheter comprises positioning the dissolvable material carried by the distal end of the catheter in the chamber.

53-54. (Canceled)

55. (Previously Amended) A method of implanting a pressure measurement device in a heart of a patient as in claim 3, wherein an introducer sheath is initially disposed about the catheter, and wherein the positioning of the catheter comprises positioning the introducer sheath and catheter across the myocardium.

56-59. (Canceled)

60. (Previously Amended) A method of implanting a pressure measurement device in a heart of a patient as in claim 11, further comprising:

providing an introducer catheter;

navigating the introducer catheter through the patient's vascular system and into the patient's heart; and

wherein the positioning of the pressure transmission catheter comprises advancing the pressure sensor assembly through the introducer catheter.

61. (Previously Amended) A method of implanting a pressure measurement device in a heart of a patient as in claim 60, wherein the navigating of the introducer catheter comprises positioning a distal end of the introducer catheter adjacent a septal wall in the patient's heart.

62. (Previously Amended) A method of implanting a pressure measurement device in a heart of a patient as in claim 61, wherein the distal end of the introducer catheter includes an anchor, and wherein the method further comprises engaging the anchor to the septal wall.

63. (Previously Presented) A method of implanting a pressure measurement device in a heart of a patient as in claim 1, wherein the barrier is compliant.

64. (Previously Presented) A method of implanting a pressure measurement device in a heart of a patient as in claim 1, wherein the barrier comprises a gel.

65. (Previously Presented) A method of implanting a pressure measurement device in a heart of a patient as in claim 1, wherein the barrier comprises a membrane.

66. (Previously Presented) A method of implanting a pressure measurement device in a heart of a patient as in claim 1, wherein the pressure transducer comprises a piezoresistive type transducer.

67. (Currently Amended) A method of implanting a pressure measurement device in a heart of a patient, the method comprising:

providing a pressure sensor assembly comprising a pressure transducer and a pressure transmission member that defines a cavity, the pressure transmission member consisting of a unitary tube structure that defines a single lumen within the unitary tube structure, the unitary tube structure having ~~and that~~ has a distal portion that extends to a distal tip and a proximal portion, wherein the unitary tube structure is in part within the proximal portion of the unitary tube structure and in part within the distal portion of the unitary tube structure, the pressure transducer connected to the proximal portion of the pressure transmission member the distal portion of the pressure transmission member having an opening with a barrier, wherein the proximal portion is more crush resistant than the distal portion, and wherein the distal portion is more flexible than the proximal portion and has a degree of flexibility and radiused corners such that the distal tip is atraumatic;

positioning the pressure transmission member so that the relatively crush resistant proximal portion is disposed in, and extends across a substantial portion of an entire distance of, a heart wall, and so that the relatively flexible distal portion is located substantially within a chamber of the heart.

68. (Previously Presented) A method of implanting a pressure measurement device in a heart of a patient as in claim 67, wherein the pressure transmission member comprises a tube.

69. (Previously Amended) The method of claim 13, wherein the pressure sensor assembly includes a housing which is disposed outside the chamber of the heart on an opposite side of the heart wall.

70. (Previously Presented) The method of claim 67, wherein the pressure transducer is provided in a housing which is disposed outside the chamber of the heart on an opposite side of the heart wall.

71. (Previously Presented) The method of claim 1, further comprising:
providing a structure that is separate from the pressure sensor assembly; and
using the structure to pierce a hole in the heart wall so that the catheter can be positioned so that the catheter is disposed in the heart wall.

72. (Previously Presented) The method of claim 71, wherein the separate structure that is used to pierce a hole in the heart wall is a dissolvable pointed tip on the distal portion of the catheter.

73. (Previously Presented) The method of claim 71, wherein the separate structure that is used to pierce a hole in the heart wall is an anchor that is positioned within the heart wall and that has a lumen passing through the anchor within which the catheter is positioned when disposed in the heart wall.

74. (Previously Presented) The method of claim 71, wherein:
the separate structure is a needle that is advanced within the catheter until it punctures through the heart wall;
the catheter is advanced over the needle until the relatively flexible distal portion of the catheter is located substantially within the chamber of the heart; and
the needle is removed from the catheter leaving the catheter in place.

75. (Previously Presented) The method of claim 71, wherein the separate structure is a delivery catheter with a sharp tip that punctures the heart wall.

76. (New) A method of implanting a pressure measurement device in a heart of a patient, the method comprising:

providing a pressure sensor assembly comprising a pressure transducer and a pressure transmission catheter, the catheter having a distal portion that extends to a distal tip and a proximal portion, the pressure transducer connected to the proximal portion of the catheter, the distal portion of the catheter having an opening at the distal tip with a barrier, wherein the proximal portion is more crush resistant than the distal portion, and wherein the distal portion is more flexible than the proximal portion and has a degree of flexibility and radiused corners such that the distal tip is atraumatic, and wherein the pressure sensor assembly includes a housing containing the pressure transducer; [[and]]

positioning the catheter so that the relatively crush resistant proximal portion is disposed in, and extends across a substantial portion of an entire distance of, a heart wall, and so that the relatively flexible distal portion is located substantially within a chamber of the heart; and securing the housing to the heart wall.

77. (New) A method of implanting a pressure measurement device in a heart of a patient as in claim 76, wherein the securing of the housing to the heart wall comprises securing the housing outside the heart.

78. (New) A method of implanting a pressure measurement device in a heart of a patient as in claim 77, wherein the securing of the housing to the heart wall comprises securing the housing inside the heart.